

Appln. No. 09/681,454
Docket No. GEN-0390 / 41PR-7785

REMARKS / ARGUMENTS

Status of Claims

Claims 9-16 and 42-45 are pending in the application and stand rejected. Applicant has amended Claims 9, 13 and 42-45, leaving Claims 9-16 and 42-45 for consideration upon entry of the present Amendment.

Applicant respectfully submits that the rejections under 35 U.S.C. §112, second paragraph, and 35 U.S.C. §103(a), have been traversed, that no new matter has been entered, and that the application is in condition for allowance.

These amendments and accompanying remarks were not presented earlier because Applicant did not fully appreciate the nature of the Examiner's position until further advised by the final rejection, which introduced the Morikawa et al. [JP 1-300506] reference. The claim amendments presented herein, which Applicant requests entry thereof, should only require a cursory review by the Examiner.

Rejections Under 35 U.S.C. §112, second paragraph

Claims 42-45 are rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. The Examiner comments that Applicant should clarify what "X" is intended to refer to.

Applicant has amended Claims 42-45 to clarify the meaning of "X", which means a multiple of the current rating of the device, or "times the current rating of the device." Support for this meaning is found in the specification as originally filed at page 13, lines 5-18. No new matter has been added.

In view of the foregoing, Applicant respectfully requests the Examiner to reconsider and withdraw this rejection, which Applicant considers to be traversed.

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Rejections Under 35 U.S.C. §103(a)

Claims 9, 11 and 42-45 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Takeya et al. (JP Patent No. 56-67915, hereinafter Takeya) in view of Morikawa et al. (JP Patent No. 1-300506, hereinafter Morikawa).

Claim 10 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Takeya, as modified and as applied to Claim 9, and further in view of Berkcan et al. (U.S. Patent No. 6,018,239, hereinafter Berkcan).

Claim 12 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Takeya, as modified and as applied to Claim 9, and further in view of Burns et al. (U.S. Patent No. 3,621,334, hereinafter Burns).

Claims 13-16 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Takeya, as modified and as applied to Claim 9, and further in view of Smith (U.S. Patent No. 5,495,169, hereinafter Smith).

Applicant traverses these rejections for the following reasons.

Applicant respectfully submits that the obviousness rejection based on the References is improper as the References fail to teach or suggest each and every element of the instant invention. For an obviousness rejection to be proper, the Examiner must meet the burden of establishing a prima facie case of obviousness. *In re Fine*, 5 U.S.P.Q.2d 1596, 1598 (Fed. Cir. 1988). The Examiner must meet the burden of establishing that all elements of the invention are taught or suggested in the prior art. MPEP §2143.03.

Regarding Claims 9, 11 and 42-45

Takeya discloses a magnetic core having a first layer of material 5 *absent an air gap* and a second layer of material 6 having *an air gap*, as seen by reference numeral 10. (Figures 4 and 8). As referenced by the Examiner, Takeya is absent disclosure of a first material having *a relatively high magnetic permeability* and a second material having *a relatively low magnetic permeability*, to provide a *mixed material* magnetic core. While the Examiner references numerals 5 and 6 of Takeya in support of the assertion that Takeya discloses a first material having *a relatively high magnetic permeability* and a

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second material having *a relatively low magnetic permeability*, Applicant finds Takeya to only disclose a first layer of material 5 *absent an air gap* and a second layer of material 6 having *an air gap*, with no disclosure of a *mixed material* magnetic core having *different relative magnetic permeability's*. Without evidence to the contrary, Applicant views elements 5 and 6 of Takeya to differ by the absence or presence of air gap 10, and not by a difference in magnetic permeability's.

Morikawa discloses a laminated c-shaped core having an element mounted in the air gap (figure 10). As referenced by the Examiner, Applicant submits that Morikawa fails to cure the above-noted deficiencies of Takeya.

Applicant has amended Claim 9 to more particularly describe the subject matter Applicant regards as the invention. More specifically, Claim 9 claims, inter alia, a *mixed material* magnetic core having a first plurality of layers of material having *a relatively high magnetic permeability* and a second plurality of layers of material having *a relatively low magnetic permeability*. Here, Applicant claims a *mixed material* magnetic core having material with *different relative magnetic permeability's*. Support of the mixed material magnetic core is found in the specification as originally filed at page 13, line 22. No new matter has been added. Dependent claims inherit all of the limitations of the parent claim.

In comparing the combination of Takeya and Morikawa with the present invention, Applicant respectfully submits that Takeya is absent disclosure of a *mixed material* magnetic core having *different relative magnetic permeability's*, and that Morikawa fails to cure this deficiency.

Regarding Claim 10

Claim 10 is dependent from Claim 9 and therefore inherits all of the limitations of the parent claim.

Berkcan discloses a core 70 for a current sensor 50 having windings 78 mounted on bobbins 72 mounted on the core legs. (Figures 1 and 2, and col. 4, lines 30-50).

In comparing the combination of Takeya, as modified, and Berkcan with the present invention, and in view of the prior discussion relating to Claim 9, Applicant

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respectfully submits that Takeya is absent disclosure of a *mixed material* magnetic core having *different relative magnetic permeability's*, and that Berkean fails to cure this deficiency.

Regarding Claim 12

Claim 12 is dependent from Claim 9 and therefore inherits all of the limitations of the parent claim.

Burns discloses a c-shaped and a figure-eight-shaped magnetic core used with a current sensor having a Hall effect device mounted in a gap. (Figures 1, 4 and 5, and col. 2, lines 17-18).

In comparing the combination of Takeya, as modified, and Burns with the present invention, and in view of the prior discussion relating to Claim 9, Applicant respectfully submits that Takeya is absent disclosure of a *mixed material* magnetic core having *different relative magnetic permeability's*, and that Burns fails to cure this deficiency.

Regarding Claims 13-16

Claims 13-16 are dependent from Claim 9 and therefore inherit all of the limitations of the parent claim.

Additionally, Applicant has amended Claim 13 to more clearly describe the subject matter that Applicant regards as the invention. More specifically, Applicant has amended Claim 13 to now claim, inter alia, a first plurality of layers of material that *are different from* a second plurality of layers of material, thereby forming a *mixed material* magnetic core.

Smith discloses a core (16, 31) for a current sensor being formed of NiFe with various nickel percentages. (Figure 2A, and col. 6, lines 17-38).

The Examiner alleges that Smith discloses that various nickel percentages can be used within the core structure to control the magnetic flux density and permeability. (Paper 030504, page 5). However, the Examiner has not pointed out with specificity where Smith discloses a *mixed material* magnetic core where *different layers* are made of *different material* for the purpose of controlling the *dynamic range* of the core, as claimed in the instant invention.

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In comparing the combination of Takeya, as modified, and Smith with the present invention, and in view of the prior discussion relating to Claim 9, Applicant respectfully submits that Takeya is absent disclosure of a *mixed material* magnetic core having *different relative magnetic permeability's*, and that Smith fails to cure this deficiency.

As referenced, Takeya, Morikawa, Berkcan, Burns and Smith (the References) are absent disclosure of a *mixed material* magnetic core having at least a first plurality of layers of material *having a relatively high magnetic permeability and* at least a second plurality of layers of material *having a relatively low magnetic permeability* arranged proximate the first plurality of layers of material, wherein the mixed material magnetic core exhibits a *dynamic range* greater than a dynamic range of a similarly shaped magnetic core having only one of the first plurality of layers of material and the second plurality of layers of material.

In view of the foregoing, Applicant submits that the References fail to teach or suggest each and every element of the claimed invention and disclose a substantially different invention from the claimed invention, and therefore cannot properly be used to establish a prima facie case of obviousness. Accordingly, Applicant respectfully requests reconsideration and withdrawal of all rejections under §103(a).

Additionally, Applicant respectfully submits that an Examiner cannot establish obviousness by locating references which describe various aspects of a patent Applicant's invention without also providing evidence of the motivating force which would impel one skilled in the art to do what the patent Applicant has done. *Ex parte Levengood*, 28, USPQ2d 1300, 1302 (Bd.Pat.App.Int., 1993). References may not be combined indiscriminately. It is not enough for a valid rejection to view the prior art in retrospect once an Applicant's disclosure is known. The art applied should be viewed by itself to see if it fairly disclosed doing what an Applicant has done. *In re Skoll*, 187 USPQ 481, 484 (CCPA, 1975) (citing *In re Schaffer*, 108 USPQ 326, 328-29 (CCPA, 1956)). "The test for an implicit showing [of obviousness] is what the combined teachings, knowledge

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of one of ordinary skill in the art, and the nature of the problem to be solved *as a whole* would have suggested to those of ordinary skill in the art." (Emphasis added). *In re Kotzab*, 217 F.3d 13645, 1370, 55 USPQ2d 1313, 1317 (Fed. Cir. 2000).

Claim 9 specifically claims a *mixed material* magnetic core wherein the mixed material magnetic core *exhibits a dynamic range greater than a dynamic range of a similarly shaped magnetic core having only one of the first plurality of layers of material and the second plurality of layers of material*.

As discussed earlier, the Examiner alleges that Smith discloses that various nickel percentages can be used within the core structure to control the magnetic flux density and permeability, and that the specific percentage of nickel used in each of the core sections would have been an obvious design consideration based on the desired operating characteristics. (Paper 030504, page 5).

In comparing the References with the instant invention, Applicant does not find in the References any suggestion, teaching or motivation to create a *mixed material* magnetic core for the purpose of controlling the *dynamic range* of the core, as claimed in the instant invention. Also, Applicant does not find any recognition in the References of the advantages of employing a *mixed material* magnetic core having a *plurality of layers* of core material having relatively *high and low magnetic permeability's* for the purpose of expanding the sensor *dynamic range* over a range of current ratings. Only in the instant application does one skilled in the art find such suggestion, teaching or motivation.

In arriving at an absence of any suggestion, teaching or motivation to combine the References, one skilled in the art does not arrive at the claimed invention.

In view of the foregoing, Applicant submits that no motivation can be found in any of the References to combine the technologies of the References to arrive at the claimed invention, and that the Examiner has improperly combined the References since there is no evidence of a motivating force that would impel one skilled in the art to do what the patent Applicant has done. Accordingly, Applicant respectfully requests reconsideration and withdrawal of all rejections under 35 U.S.C. §103(a).

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In light of the forgoing, Applicant respectfully submits that the Examiner's rejections under 35 U.S.C. §112, second paragraph, and 35 U.S.C. §103(a), have been traversed, and respectfully requests that the Examiner reconsider and withdraw these rejections.

The Commissioner is hereby authorized to charge any additional fees that may be required for this amendment, or credit any overpayment, to Deposit Account No. 06-1130.

In the event that an extension of time is required, or may be required in addition to that requested in a petition for extension of time, the Commissioner is requested to grant a petition for that extension of time that is required to make this response timely and is hereby authorized to charge any fee for such an extension of time or credit any overpayment for an extension of time to the above identified Deposit Account.

Respectfully submitted,

CANTOR COLBURN LLP

Applicant's Attorneys

By: 

David Arnold
Registration No: 48,894
Customer No. 23413

Address: 55 Griffin Road South, Bloomfield, Connecticut 06002
Telephone: (860) 286-2929
Fax: (860) 286-0115